

OIB - DC-8 11/12/16 Science Report

Aircraft:

[DC-8](#) ([See full schedule](#))

Date:

Saturday, November 12, 2016

Mission:

OIB

Mission Location:

Abbott and Cosgrove ice shelves, West Antarctica (Abbott 02)

Mission Summary:

Mission: Abbott 02 (priority: high)

This is a new flight, designed to improve the density of the 2009 survey lines over the Abbott Ice Shelf. For the western two-thirds of the ice shelf, we interlace the 2009 north-south lines with parallel lines, since the 2009 survey showed that the most significant bathymetric features in this area are oriented in an east-west direction, across the axis of the flight lines. The easternmost third of the ice shelf lies in a different tectonic setting where the most important bathymetric features may be oriented in a north-south direction, so there we orient the flight lines east-west.

A tough decision between two very different missions today. We ultimately favored a strong forecast for the Abbott Ice Shelf region, and we were better rewarded for that decision than yesterday. The clouds cleared as we descended for the first waypoint and we avoided them for nearly the entire flight. ATM/FLIR/CAMBOT/DMS lost a few minutes of data at irregular intervals to small clouded areas, which we were able to easily ascend over. Good views of the terminus of Abbott Ice Shelf, new ground on the poorly surveyed Cosgrove Ice Shelf, and also an uncommon low-altitude overflight of Rignot Glacier, named after Eric Rignot, OIB's land ice science team lead. This glacier drains into the western end of Abbott Ice Shelf. Unfortunately, by that point in the survey the light was too flat to discern the glacier well photographically. Overall, a successful survey of an infrequently visited region.

All instruments performed well.

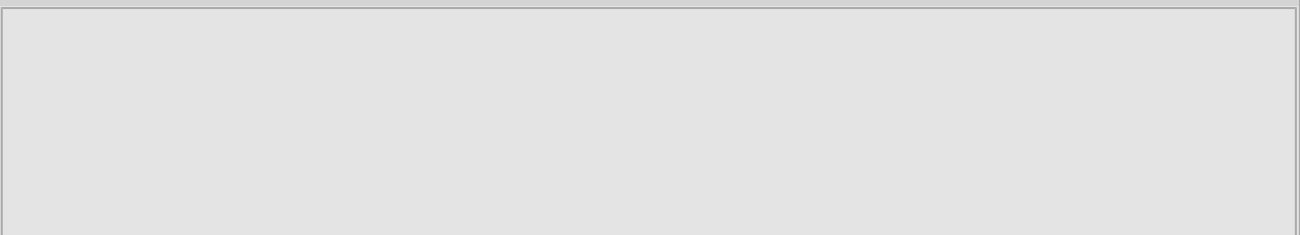
We conducted a ramp pass at 1500' on departure from PUQ.

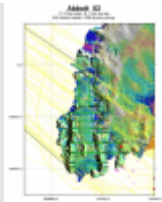
Attached images are:

1. Map of today's flight.
2. Nunataks on Thurston Island (NASA / John Sonntag).
3. DC-8 shadow against crevasses on Abbott Ice Shelf (NASA / Joe MacGregor).
4. Elevation along the eastern flank of Rignot Glacier, approximately 0-100 s in the plot (WFF ATM / Jim Yungel)
5. MCoRDS and snow radar data collection over a transition from grounded ice to the floating Abbott Ice Shelf, showing the change in bed echo intensity and the detailed layering of the near-surface (KU / Carl Leuschen)

Images:

Map of today's flight





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Nunataks on Thurston Island



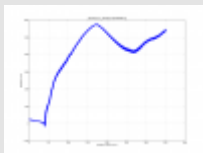
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DC-8 shadow against crevasses on Abbott Ice Shelf



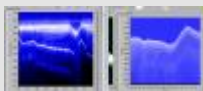
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Elevation along the eastern flank of Rignot Glacier, approximately 0-100 s



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MCoRDS and snow radar data collection over a transition from grounded



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Submitted by:

Joseph MacGregor on 11/15/16

Related Flight Report:

DC-8 11/12/16 - 11/13/16

Flight Number:

1159

Payload Configuration:

OIB-ATM NAV/ATM GPS/ATM-T5/T6/ATM FLIR/ATM CAMBOT MCoRDS/SNOW/Ku RADAR DMS/POS-AV GRAVIMETER & ARMAS (piggyback)

Nav Data Collected:

Yes

Total Flight Time:

11.1 hours

Submitted by:

Timothy Moes on 11/13/16

Flight Segments:

From:	SCCI - Punta Arenas	To:	SCCI
Start:	11/12/16 13:13 Z	Finish:	11/13/16 00:19 Z
Flight Time:	11.1 hours		
Log Number:	178010	PI:	Nathan Kurtz
Funding Source:	Bruce Tagg - NASA - SMD - ESD Airborne Science Program		
Purpose of Flight:	Science		
Comments:	Good Flight. This was a new flight, designed to improve the density of the 2009 survey lines over the Abbott Ice Shelf. All science instruments recorded good data and 98% cloud free in the target areas. The aircraft had a few minor writeups, but no grounding items.		

Flight Hour Summary:

	178010
Flight Hours Approved in SOFRS	300
Total Used	306.9
Total Remaining	-6.9

178010 Flight Reports

Date	Flt #	Purpose of Flight	Duration	Running Total	Hours Remaining
10/04/16	1135	Science	4	4	296
10/05/16	1136	Science	2.7	6.7	293.3
10/12/16	1138	Transit	10.9	17.6	282.4
10/12/16	1139	Transit	3	20.6	279.4
10/14/16 - 10/15/16	1140	Science	10.9	31.5	268.5
10/15/16 - 10/16/16	1141	Science	11.8	43.3	256.7
10/17/16 - 10/18/16	1142	Science	11.8	55.1	244.9
10/20/16 - 10/21/16	1143	Science	11.4	66.5	233.5
10/22/16	1144	Science	11	77.5	222.5
10/24/16 - 10/25/16	1145	Science	11.5	89	211
10/25/16 - 10/26/16	1146	Science	11.3	100.3	199.7
10/26/16 - 10/27/16	1147	Science	12.1	112.4	187.6
10/27/16 - 10/28/16	1148	Science	11.5	123.9	176.1
10/28/16 - 10/29/16	1149	Science	11	134.9	165.1
10/31/16 - 11/01/16	1150	Science	11	145.9	154.1
11/02/16 - 11/03/16	1151	Science	11.2	157.1	142.9
11/03/16 - 11/04/16	1152	Science	11.5	168.6	131.4
11/04/16 - 11/05/16	1153	Science	11.1	179.7	120.3

11/05/16 - 11/06/16	1154	Science	11.7	191.4	108.6
11/07/16 - 11/08/16	1155	Science	11.2	202.6	97.4
11/09/16 - 11/10/16	1156	Science	11.7	214.3	85.7
11/10/16	1157	Science	10.9	225.2	74.8
11/11/16 - 11/12/16	1158	Science	11.3	236.5	63.5
11/12/16 - 11/13/16	1159	Science	11.1	247.6	52.4
11/14/16	1160	Science	10.9	258.5	41.5
11/15/16 - 11/16/16	1161	Science	11.6	270.1	29.9
11/17/16 - 11/18/16	1162	Science	11.1	281.2	18.8
11/18/16 - 11/19/16	1163	Science	11.1	292.3	7.7
11/21/16	1165	Transit	11.6	303.9	-3.9
11/21/16	1164	Transit	3	306.9	-6.9

Flight Reports began being entered into this system as of 2012 flights. If there were flights flown under an earlier log number the flight reports are not available online.

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